DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION
RCRA Corrective Action
Environmental Indicator (EI) RCRIS code (CA725)

Current Human Exposures Under Control

Facility Name: General Electric Company - Hudson Falls, New York
Facility Address: John Street, Hudson Falls, Washington County, New York 12839
Facility EPA ID #: NYD002080075

BACKGROUND

Definition of Environmental Indicators (for the RCRA Corrective Action)

Environmental Indicators (EI) are measures being used by the Resource Conservation Recovery Act (RCRA) Corrective Action program to go beyond programmatic activity measures (e.g., reports received and approved, etc.) to track changes in the quality of the environment. The two EI developed to-date indicate the quality of the environment in relation to current human exposures to contamination and the migration of contaminated groundwater. An EI for non-human (ecological) receptors is intended to be developed in the future.

Definition of "Current Human Exposures Under Control" EI

A positive "Current Human Exposures Under Control" EI determination ("YE" status code) indicates that there are no "unacceptable" human exposures to "contamination" (i.e., contaminants in concentrations in excess of appropriate risk-based levels) that can be reasonably expected under current land- and groundwater-use conditions (for all "contamination" subject to RCRA corrective action at or from the identified facility (i.e., site-wide)).

Relationship of EI to Final Remedies

While Final remedies remain the long-term objective of the RCRA Corrective Action program, the EI are near-term objectives which are currently being used as Program measures for the Government Performance and Results Act of 1993, (GPRA). The "Current Human Exposures Under Control" EI are for reasonably expected human exposures under current land- and groundwater-use conditions ONLY, and do not consider potential future land- or groundwater-use conditions or ecological receptors. The RCRA Corrective Action program's overall mission to protect human health and the environment requires that Final remedies address these issues (i.e., potential future human exposure scenarios, future land and groundwater uses, and ecological receptors).

Duration / Applicability of EI Determinations

EI Determinations status codes should remain in Resource Conservation Recovery Information System (RCRIS) national database ONLY as long as they remain true (i.e., RCRIS status codes must be changed when the regulatory authorities become aware of contrary information).

1. Has **all** available relevant/significant information on known and reasonably suspected releases to soil, groundwater, surface water/sediments, and air, subject to RCRA Corrective Action (e.g., from Solid Waste Management Units (SWMU), Regulated Units (RU), and Areas of Concern (AOC)), been **considered** in this EI determination?

   X If yes - check here and continue with #2 below.

   ___ If no - re-evaluate existing data, or

   ___ If data are not available skip to #6 and enter"IN" (more information needed) status code.

Facility Information:

The GE Hudson Falls site is on the east bank of the Hudson River, in the Village of Hudson Falls, Washington County, New York–bounded on the south by John Street and the adjacent GL&V facility, on the east by Derby Street, and on the north by Bridge Street. GE purchased the facility in 1952 from the Union Bag and Paper Corporation, and manufactured fluid-filled capacitors at the Hudson Falls site from 1952 until 1986. From 1986 until 1995, GE continued to weld capacitors, manufactured at GE's Fort Edward facility, onto frames and prepare them for shipment. Since 1995, there have been no manufacturing operations at the site. Land use around the site is mixed residential and commercial. Property to the southwest of the facility is owned by Niagara Mohawk Power Corporation (NMPC), which includes the Eastern Raceway, the Allen Mill, and the old NMPC power station. The GL&V manufacturing facility is to the south. Residential neighborhoods are located to the east of the facility, off Derby Street (Dames & Moore, 1997). The property to the north of the facility is a pump station for the Washington County sewer district.

From 1952 through 1977, GE used polychlorinated biphenyls (PCBs) at the Hudson Falls site as dielectric fluids. In 1976, GE began using alternative non-PCB dielectric fluids. From 1976 to 1978, Dielektrol-II (DK-II), comprised of bis(2-ethylhexyl)phthalate (BEHP) and trichlorobenzene (TCB), was used to fill capacitors. From 1979 to 1986, the primary dielectric fluid used at the site was Dielektrol-V (DK-V), which contained BEHP and phenyl xylyl ethane (PXE). Geconol, which contained 99% by weight BEHP, may also have been used at the site. Solvents that were used at the site included: tetrachloroethene (PCE); trichloroethene (TCE); and 1,1,1-trichloroethane (1,1,1-TCA). GE's environmental investigation at the site began in June 1975. Groundwater and soil constituent concentrations have been extensively studied at the site. Contaminants have been found in the soils and groundwater from the shallow water-bearing zone at the site. A number of release mechanisms (primarily spills, leaks, and cleaning and storage procedures) have led to significant soil and groundwater contamination at the facility. In 1975, investigations confirmed that PCB-contaminated wastewater was being discharged through the 002 Outfall to the Hudson River, at approximately 300 to 550 grams of PCBs

per day (Dames & Moore, 1997).

In 1984, the Hudson River was classified as a federal Superfund site (EPA ID No. NYD980763841). The Site included a nearly 200 river-mile stretch of the Hudson River from the Village of Hudson Falls to the Battery in New York City. The Site is divided into the Upper Hudson River (the length of river between Hudson Falls and the Federal Dam at Troy, New York) and the Lower Hudson River (the length of river between Federal Dam at Troy and the Battery). The Upper Hudson River region includes certain areas that have been and may continue to be sources of PCB contamination to the river, including GE's Hudson Falls plant and Fort Edward plant (which discharged between 209,000 and 1.3 million pounds of PCBs into the river), and Remnant Deposits 1-5 (which are areas of PCB-contaminated sediment that became exposed after the river water level dropped following removal of the Fort Edward Dam in 1973). In 1976, because of the concern over the bioaccumulation of PCBs in fish and other aquatic organisms and their subsequent consumption by people, the New York State Department of Environmental Conservation (NYSDEC) banned fishing in the Upper Hudson River and commercial fishing of striped bass, and several other species, in the Lower Hudson. In August 1995, the Upper Hudson was re-opened to fishing, but only on a catch and release basis. In 1991 and 1992, investigation at Bakers Falls, in the vicinity of the GE Hudson Falls facility showed elevated PCB concentrations in the water column. GE signed a consent agreement with NYSDEC to further investigate this area and to conduct interim remedial measures to prevent PCB contamination from this source from entering the river. After the implementation of interim remedial measures at the Hudson Falls Plant site, PCB concentrations in the water-column have decreased to levels which are similar to or below those measured before the 1991 peak PCB levels. Additional studies are being conducted to evaluate whether additional control measures can further reduce contributions to the water column from the Hudson Falls Plant site (U.S. EPA, 2002b). In 2002, EPA reached an agreement with GE for the company to fund and perform sediment characterization work, which includes the sampling and mapping of PCBs in the river bottom, as a step in the design of the Hudson River PCBs site cleanup. This information will allow engineers to develop "cut lines" for dredging (U.S. EPA, 2002a).

It should be noted that contaminated sediments in the Hudson River that are not addressed by remedial actions at this facility, are considered part of the "Hudson River Site" and are being addressed separately by the EPA Superfund program.

2. Are groundwater, soil, surface water, sediments, or air **media** known or reasonably suspected to be **"contaminated"**[1] above appropriately protective risk-based "levels" (applicable promulgated standards, as well as other appropriate standards, guidelines,

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[1]"Contamination" and "contaminated" describes media containing contaminants (in any form, NAPL and/or dissolved, vapors, or solids, that are subject to RCRA) in concentrations in excess of appropriately protective risk-based "levels" (for the media, that identify risks within the acceptable risk range).

guidance, or criteria) from releases subject to RCRA Corrective Action (from SWMUs, RUs or AOCs)?

	Yes	No	?	Rationale / Key Contaminants
Groundwater	X	___	___	PCBs, VOCs, SVOCs
Air (indoors)[2]	X*	___	___	
Surface Soil (e.g., <2 ft)	X	___	___	PCBs, VOCs, SVOCs,
Surface Water	X	___	___	PCBs
Sediment	X	___	___	PCBs
Subsurf. Soil (e.g., >2 ft)	X	___	___	PCBs, VOCs, SVOCs,
Air (outdoors)	___	X	___	

* See attached indoor air screening analysis

___ If no (for all media) - skip to #6, and enter "YE," status code after providing or citing appropriate "levels," and referencing sufficient supporting documentation demonstrating that these "levels" are not exceeded.

X If yes (for any media) - continue after identifying key contaminants in each "contaminated" medium, citing appropriate "levels" (or provide an explanation for the determination that the medium could pose an unacceptable risk), and referencing supporting documentation.

___ If unknown (for any media) - skip to #6 and enter "IN" status code.

Rationale and Reference(s):
Constituent concentrations in groundwater and soil have been extensively studied at the site. Contaminants have been found in the soils and groundwater from the shallow water-bearing zone at the site. A number of release mechanisms (primarily spills, leaks, and cleaning and storage procedures) have led to significant soil and groundwater contamination at the facility.

An Overburden Remedial Investigation (RI) was conducted from August 1994 through September 1996, which evaluated two media-based Operable Units for the Hudson Falls site–the overburden soil and groundwater at and near the site above the Snake Hill Shale. The depth to the water table throughout the site varies seasonally. The depth to water as of March 4, 1996 ranged from 0.52 to 13.24 feet below ground surface. The lateral direction of groundwater flow in the overburden is generally northwest towards the

[2]Recent evidence (from the Colorado Dept. of Public Health and Environment, and others) suggest that unacceptable indoor air concentrations are more common in structures above groundwater with volatile contaminants than previously believed. This is a rapidly developing field and reviewers are encouraged to look to the latest guidance for the appropriate methods and scale of demonstration necessary to be reasonably certain that indoor air (in structures located above (and adjacent to) groundwater with volatile contaminants) does not present unacceptable risks.

Hudson River. Some of the water within the overburden percolates downward into the underlying Snake Hill Shale. Approximately 50% of the groundwater that flows across the site passes under the manufacturing buildings and has high levels of contaminants. The Overburden RI was divided based on six geographic sections of the site: eastern area, former manufacturing area, western area, southern area, south end of the Eastern Raceway, and the pump house sediments, as depicted in Figure 7-1, attached.

PCBs in overburden groundwater appear in the greatest concentrations at the former manufacturing area and in soils at the western area. The highest volatile organic compound (VOC) concentrations in overburden groundwater occurred in the eastern area, former manufacturing area, and southern area. The highest semi-volatile organic compound (SVOC) concentrations in overburden groundwater occurred in the former manufacturing area–specifically, bis(2-ethylhexyl)phthalate was detected at a maximum concentration of 1,103.4 parts per million (ppm). The former manufacturing area soil samples exhibited the highest concentrations of VOCs and SVOCs.

The pump house is located on the bank of the Hudson River approximately 80 feet upstream of the Bakers Falls Dam and the gate house, and it extends approximately 60 feet into the Hudson River. Elevated concentrations of total PCBs were detected in the sediment samples collected near the pump house. These sediments were removed by General Electric, under NYSDEC oversight, as an Interim Remedial Measure (IRM) in the late 1990's.

Based on the presence of elevated concentrations of VOCs in soil and shallow groundwater, the potential theoretically exists for these constituents to impact the indoor air quality in onsite buildings and structures and the ambient air. The groundwater monitoring well data for the site indicate that there are site-related contaminants in the geographic vicinity of residences adjacent to the site. However, these contaminants are approximately 80 feet below grade, in the bedrock, beneath a fairly thick lake clay layer which lies on top of the bedrock surface.

Sampling results from overburden monitoring wells in the eastern portion of the site (the homes are to the east) do not indicate the presence of site contaminants, which is expected as the hydraulic gradients are from east to west, toward the regional groundwater discharge boundary (to the Hudson River). The contaminants in the bedrock migrated against the gradient in the bedrock as a result of DNAPL flow along bedding planes and low angle faults which dip to the east-southeast. DNAPL migration toward the homes in the overburden has not been observed. The route of exposure for VOCs from the site to the people who reside near the site does not appear to be complete, and as a result DEC did not require VOC sampling either in the homes or in the vadose zone adjacent to the homes. EPA's indoor air screening has been run, and the results support the no-contamination position. See attached documentation for details.

As far as ambient air quality, there is no reasonable hypothesis for why it should be a

significant exposure route. There is no manufacturing taking place on the site, and VOC levels in the soil are not high enough to be significant once the dilution takes place with ambient air volumes.

3. Are there **complete pathways** between "contamination" and human receptors such that exposures can be reasonably expected under the current (land- and groundwater-use) conditions?

Summary Exposure Pathway Evaluation Table
Potential **Human Receptors** (Under Current Conditions)

"Contaminated" Media	Residents	Workers	Day-Care	Construction	Trespassers	Recreation	Food[3]
Groundwater	no	no		no			no
Air (indoors)	no	yes		yes			
Soil (surface, e.g., <2 ft)	no	yes		yes	yes	no	no
Surface Water	no	no			no	no	no
Sediment	no	no			no	no	no
Soil (subsurface e.g., >2 ft)				yes			no
~~Air (outdoors)~~							

Instructions for Summary Exposure Pathway Evaluation Table:

1. Strike-out specific Media including Human Receptors' spaces for Media which are not "contaminated" as identified in #2 above.
2. enter "yes" or "no" for potential "completeness" under each "Contaminated" Media -- Human Receptor combination (Pathway).

Note: In order to focus the evaluation to the most probable combinations some potential "Contaminated" Media - Human Receptor combinations (Pathways) do not have check spaces ("___"). While these combinations may not be probable in most situations they may be possible in some settings and should be added as necessary.

___ If no (pathways are not complete for any contaminated media-receptor combination) - skip to #6, and enter "YE" status code, after explaining and/or referencing condition(s) in-place, whether natural or man-made, preventing a complete exposure pathway from each contaminated medium (e.g., use optional Pathway Evaluation Work Sheet to analyze major pathways).

X If yes (pathways are complete for any "Contaminated" Media - Human Receptor combination) - continue after providing supporting explanation.

___ If unknown (for any "Contaminated" Media - Human Receptor combination) - skip to #6 and enter "IN" status code

[3] Indirect Pathway/Receptor (e.g., vegetables, fruits, crops, meat and dairy products, fish, shellfish, etc.)

Rationale and Reference(s): For residents, there are no known exposure pathways. Soils are not contaminated to the east of the facility Bedrock groundwater beneath the eastern portion of the facility has been impacted by contaminant (DNAPL) releases from the facility; however the contamination is 80 feet down and separated from the surface by a thick (10-15 feet) lake clay layer. Overburden groundwater in this portion of the site is unimpacted. This eliminates an indoor air exposure (see vapor intrusion screening analysis, attached).

A total of nine private wells were sampled for the 1999 Hudson Falls Plant Site Eastern Bedrock Investigation. One sample, collected from a private well on June 11, 1999 contained chloroform at a concentration of 39 parts per billion (ppb), which is above the NYSDEC promulgated Class GA groundwater standard of 7.0 ppb. It should be noted that chloroform was also detected in this private well in 1998. Original and duplicate private well samples collected from a private well on June 29, 1999 contained Aroclor-1242 at concentrations of 0.26 ppb and 0.29 ppb, respectively, which are above the Class GA groundwater standard of 0.090 ppb. PCBs (i.e., Aroclor-1242) were detected and confirmed in this private well in 1998 (O'Brien & Gere Engineers, Inc., 1999). However, none of these wells are a source of drinking water and thus there is not a complete human exposure pathway here. Private well owners showing evidence of well contamination have all been connected, at GE's expense, to the public water supply, and therefore this is not a complete exposure pathway. Further testing of residential wells in the area takes place annually.

For the purposes of considering current human exposure pathways at the GE-Hudson Falls facility, exposures to onsite workers and construction/utility workers would only be associated with remedial and investigative activities (soil and subsurface soil) which are ongoing at the site. Based on the presence of VOCs in soil and shallow groundwater, the potential exists for these constituents to impact indoor air quality in onsite buildings and structures. The Former Manufacturing Area (Buildings 1 - 4A) is the only area with potential indoor air issues, however, there are no permanent workers assigned to this area. Air monitoring is performed in this area and personal protective equipment (PPE) is required, as necessary based on the air monitoring results, for any workers entering this area.

Site access is not completely restricted as there are site perimeter locations where access is not controlled–specifically adjacent to residential properties. Therefore, the trespasser scenario has been included as a complete exposure pathway to contaminated surficial soil or surface water as there are no institutional controls in place around the entire site perimeter to restrict access to the site (i.e., a perimeter fence with guarded gates, regular patrolling of the property, video camera surveillance, etc.). Trespasser access to sediments would not be possible because there is an 20' - 80' cliff drop separating the site from the riverbank.

4. Can the **exposures** from any of the complete pathways identified in #3 be reasonably

expected to be **"significant"**[4] (i.e., potentially "unacceptable" because exposures can be reasonably expected to be: 1) greater in magnitude (intensity, frequency and/or duration) than assumed in the derivation of the acceptable "levels" (used to identify the "contamination"); or 2) the combination of exposure magnitude (perhaps even though low) and contaminant concentrations (which may be substantially above the acceptable "levels") could result in greater than acceptable risks)?

_X_ If no (exposures can not be reasonably expected to be significant (i.e., potentially "unacceptable") for any complete exposure pathway) - skip to #6 and enter "YE" status code after explaining and/or referencing documentation justifying why the exposures (from each of the complete pathways) to "contamination" (identified in #3) are not expected to be "significant."

___ If yes (exposures could be reasonably expected to be "significant" (i.e., potentially "unacceptable") for any complete exposure pathway) - continue after providing a description (of each potentially "unacceptable" exposure pathway) and explaining and/or referencing documentation justifying why the exposures (from each of the remaining complete pathways) to "contamination" (identified in #3) are not expected to be "significant."

___ If unknown (for any complete pathway) - skip to #6 and enter "IN" status code

Rationale and Reference(s): Exposure of workers or construction workers to surface soil or subsurface soil at the GE Hudson Falls facility is significantly mitigated by appropriate personnel management and institutional controls such as a work permit system and other site safety programs which require personnel to wear personal protective equipment and use personal monitoring devices during any remedial/investigative activities. Thus exposure to workers is limited and assumed not to be significant.

Exposure to onsite surface soil by trespassers is determined to be insignificant primarily because of the unattractiveness of the site, the resultant infrequency of trespasser exposure, and because approximately 90-95% of the site is paved, so that exposure to underlying soils is limited to a small portion of the facility's surface area, which is covered with gravel. The area is only accessible if a trespasser goes around the fence (there is no fencing along the railroad tracks) and down about 100 yards without being stopped by on-site security personnel. Additionally, as the site is in upstate New York, it can be expected to be frozen or covered with snow during part of the year, reducing the likelihood of exposure to any trespasser, and thereby further reducing the annual possible cumulative exposure.

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[4] If there is any question on whether the identified exposures are "significant" (i.e., potentially "unacceptable") consult a human health Risk Assessment specialist with appropriate education, training and experience.

According to facility documents, groundwater discharges to the Hudson River (Dames & Moore, 1996), and the Hudson River is used as a source of potable water. Although the Towns of Waterford and Halfmoon (about 35 miles downstream), as well as other downstream residents, do utilize the Hudson River as a water supply source, all water is treated by the municipal treatment plants and there have been no exceedances in screening criteria since the 1970's.

According to the risk assessment for the Hudson River Superfund Site, risks from being exposed to PCBs in the river through skin contact with contaminated sediments and river water, incidental ingestion of sediments, and inhalation of PCBs in air are generally within or below USEPA's levels of concern.

The sediments and water in the river are contaminated with PCBs from discharges originating from GE's two capacitor manufacturing plants (GE Hudson Falls and GE Fort Edward). However, according to EPA, although the risk assessment for the Hudson River Superfund Site determined that significant human health risks existed only from exposure to PCB contaminated sediments in the River through ingestion of fish, New York State and EPA have issued health advisories against eating fish caught in the Hudson River. NYSDEC allows only catch and release fishing in these waters. Therefore, these institutional controls are considered sufficient control of human exposures through the fish consumption pathway.

5. Can the "significant" **exposures** (identified in #4) be shown to be within **acceptable** limits?

___ If yes (all "significant" exposures have been shown to be within acceptable limits) - continue and enter "YE" after summarizing and referencing documentation justifying why all "significant" exposures to "contamination" are within acceptable limits (e.g., a site-specific Human Health Risk Assessment).

___ If no (there are current exposures that can be reasonably expected to be "unacceptable")- continue and enter "NO" status code after providing a description of each potentially "unacceptable" exposure.

___ If unknown (for any potentially "unacceptable" exposure) - continue and enter "IN" status code

Rationale and Reference(s): See above discussion about trespasser scenario in #4.

6. Check the appropriate RCRIS status codes for the Current Human Exposures Under Control EI event code (CA725), and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below (and attach appropriate supporting

documentation as well as a map of the facility):

__X__ YE - Yes, "Current Human Exposures Under Control" has been verified. Based on a review of the information contained in this EI Determination, "Current Human Exposures" are expected to be "Under Control" at the General Electric Company - Hudson Falls, New York facility, EPA ID # NYD002080075, located at John Street, Hudson Falls, Washington County, New York 12839 under current and reasonably expected conditions. This determination will be re-evaluated when the Agency/State becomes aware of significant changes at the facility.

____ NO - "Current Human Exposures" are NOT "Under Control."

____ IN - More information is needed to make a determination.

This document was reviewed by the project manager for factual accuracy. The EI determination was made by RCRA Part C Corrective Action staff based on the information provided in this document, the cited references and discussions with the project manager.

Kevin L Farrar Date: 9/30/03

Kevin Farrar
Division of Env. Remediation (DER) Project Manager
NYSDEC

Lynn M. Winterberger Date: 9/30/03

Lynn M. Winterberger, P.E.
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Edwin C Dassatti Date: 9/30/03

Edwin Dassatti, P.E.
Director, Bureau of Haz. Waste and Rad. Management
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Attachments: Subsurface Vapor Intrusion Screening for the General Electric - Hudson Falls Facility

Figure 7-1, Dames & Moore, 1996

References cited:

Dames & Moore. Overburden Remedial Investigation Report, Operable Units 2A & 2B. Prepared for General Electric Company, Hudson Falls, NY. December 20, 1996.

Dames & Moore. Bedrock Remedial Investigation Report, Operable Units 2C & 2D. Prepared for General Electric Company, Hudson Falls, NY. October 31, 1997.

NYS Department of Environmental Conservation, Division of Environmental Remediation. Technical and Administrative Guidance Memorandum #4046, Determination of Soil Cleanup Objectives and Cleanup Levels. January 24, 1994.

O'Brien & Gere Engineers, Inc. 1999 Hudson Falls Residential Well Sampling and Public Water Connection Report. September 29, 1999.
U.S. Environmental Protection Agency. Hudson River PCBs. http://www.epa.gov/hudson/. October 28, 2002a.

U.S. Environmental Protection Agency, Region 2 Superfund, Fact Sheet. Hudson River PCBs. http://epa.gov/region02/superfund/npl/0202229c.htm. October 30, 2002b.

Locations where References may be found:

References reviewed to prepare this EI determination are identified after each response. Reference materials are available at the NYSDEC office at 625 Broadway, Albany, NY 12233, and US EPA Region 2, RCRA Records Center, located at 290 Broadway, 15th Floor, New York, New York.

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FINAL NOTE: THE HUMAN EXPOSURES EI IS A QUALITATIVE SCREENING OF EXPOSURES AND THE DETERMINATIONS WITHIN THIS DOCUMENT SHOULD NOT BE USED AS THE SOLE BASIS FOR RESTRICTING THE SCOPE OF MORE DETAILED (E.G., SITE-SPECIFIC) ASSESSMENTS OF RISK.

Subsurface Vapor Intrusion Screening for the General Electric - Hudson Falls Facility

As part of the effort to achieve the Government Performance Results Act goals for the Resource Conservation and Recovery Act (RCRA) program, environmental indicators (EIs) are being used to go beyond programmatic activity measures to track changes in the quality of the environment. One of the EIs developed for the RCRA Program is 'Current Human Exposures Under Control', which indicates that there are no 'unacceptable' human exposures to 'contamination' (i.e., contaminants in concentrations in excess of appropriate risk-based levels) that can be reasonably expected under current land- and groundwater-use conditions sitewide.

In order to effectively reduce or control the risk to human health and the environment, it is necessary to determine if specific exposure pathways exist. If an exposure pathway exists, we need to evaluate the site to determine whether contamination is present at levels that may pose a significant risk to human health or the environment.

EPA has published a draft guidance for evaluation of a single exposure pathway - the "vapor intrusion pathway", in which vapors from subsurface contamination of either groundwater or soils by volatile contaminants rise and enter an enclosed building atop the contamination. This guidance is a tool to conduct a screening evaluation as to whether or not the vapor intrusion exposure pathway is complete and, if so, whether it may pose an unacceptable risk to human health.

The screening process is broken into three tiers. The first is designed to identify whether or not a potential exists at a specific site for subsurface vapor intrusion, and, if so, whether immediate action might be warranted. The second tier compares measured or reasonably estimated concentrations of target chemicals in various media to recommended standards, and the third tier uses more specific estimates and direct measurements to assess risk.

General Electric, Hudson Falls is a facility which manufactured electric capacitors from 1952 until 1986, and has been a primary source of the PCB contamination of the Hudson River. This facility is now undergoing remedial action. We have subjected this facility to the Subsurface Vapor Intrusion Screening.

It appears that for GE Hudson Falls, as concluded by conducting the Subsurface Vapor Intrusion Screening, there is no problem with vapor intrusion into the indoor air. The possibility of a problem is negated in the first tier of the screening process, as described below.

The first tier of the screening tool asks three questions: (1) if chemicals of sufficient volatility and toxicity are present or reasonably expected to be present; (2) if inhabited buildings are located (or will be constructed under future scenarios) above or in close proximity to subsurface contamination; and (3) if current conditions warrant immediate action.

We are able to negate the possibility of a vapor intrusion problem from this facility in Question 1 of Tier 1, Primary Screening. 'Are chemicals of sufficient volatility and toxicity known or reasonably suspected to be present in the subsurface (e.g. in unsaturated soils, soil gas, or the

uppermost portions of the ground water and/or capillary fringe)? The answer to this question is "No". The rationale is as follows: the plume of contaminated groundwater does extend eastward of the facility under a residential area. However, the contamination in this site is about 80 feet below grade, in the bedrock aquifer, and not near the surface, which has been shown to be clean. Additionally, there is a 10' -15' contiguous layer of clay close to the surface which extends well beyond the contaminant plume. This effectively prevents migration of vapors to the surface. There are no known structural interruptions to the clay layer, such as sewer lines or geologic fractures, which would allow vapor migration. Therefore the indoor air pathway is incomplete.